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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,792	12/30/2003	James K. Klang	C382.12-0143	2106

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EXAMINER	
GRANT, ROBERT J	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

Office Action Summary	Application No.	Applicant(s)	
	10/748,792	KLANG, JAMES K.	
	Examiner	Art Unit	
	Robert Grant	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12-30-03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertness (US 6,331,762) in view of Sakai et al. (US 5,905,915).

As to claim 1, Bertness discloses a method comprising: (a) measuring a dynamic parameter of the battery (Column 4, lines 44-50); (b) obtaining a discharge current of the battery (Figure 1, Element 26); (c) measuring a voltage of the battery (Element 24); (d) obtaining a temperature of the battery (element 37); and (e) the measured battery dynamic parameter, the discharge current, the measured battery voltage (Column 5, lines 59-67), the battery temperature (Column 9, lines 1-18), a full charge battery dynamic parameter and an estimated capacity of the battery (column 8, lines 52-58). Bertness does not expressly discloses predicting a remaining run time of the battery. Sakai discloses predicting a remaining run time of the battery (Column 46, lines 66-67). It would have been obvious to a person having ordinary skill in the art at the time of this invention to add the teachings of Sakai and predict and display the remaining run time of the battery with Bertness's energy management system so that the user can visually see the remaining time left for which the battery can be used.

As for Claim 2, which is dependent upon claim 1, Bertness further discloses wherein at least one of the measured battery dynamic parameter and the full charge battery dynamic parameter are adjusted such that the measured battery dynamic parameter and the full charge battery dynamic parameter are at a same temperature standard (column 7, lines 5-14) (column 9, line 13).

As to Claim 3, which is dependent upon claim 1, Bertness further discloses wherein the dynamic parameter measurement step (a) comprises determining a response of the battery to an applied current pulse (Column 5, lines 50-56).

As to Claim 4, which is dependent upon claim 1, Bertness further discloses wherein the measured battery dynamic parameter is battery conductance (Column 5, lines 60-62).

As to Claim 5, which is dependent upon claim 1, Bertness further discloses wherein the measured battery dynamic parameter is battery resistance (Column 5, lines 60-62).

As to Claim 6, Bertness in view of Sakai disclose a battery monitor implementing the method of claim 1 (See rejection of Claim 1).

As to Claim 7, which is dependent upon claim 6, Bertness in view of Sakai disclose the battery monitor carries out steps (a)-(e) iteratively.

As to Claim 8, Bertness in view of Sakai disclose a battery tester implementing the method of claim 1 (See rejection for claim 1).

As to Claim 9 Bertness discloses an apparatus comprising: a positive connector coupled to a positive terminal of the battery (figure 1, element 36A); a negative connector coupled to a negative terminal of the battery (element 36B) (Column 4, lines 15-18); a voltage sensor configured to measure a voltage of the battery (element 24); a temperature sensor configured to measure a temperature of the battery (element 37); a current sensor configured to measure a discharge current of the battery (Element 26); and processing circuitry configured to measure a dynamic parameter of the battery using the first and second connectors (Column 4, lines 44-50), the measured battery dynamic parameter, the discharge current, the measured battery voltage (Column 5, lines 59-67), the battery temperature (Column 9, lines 1-18), a full charge battery dynamic parameter and an estimated capacity of the battery (column 8, lines 52-58). Bertness does not expressly discloses predicting a remaining run time of the battery. Sakai discloses predicting a remaining run time of the battery (Column 46, lines 66-67). It would have been obvious to a person having ordinary skill in the art at the time of this invention to add the teachings of Sakai and predict and display the remaining run time of the battery with Bertness's energy management system so that the user can visually see the remaining time left for which the battery can be used.

As to claim 10, which is dependent upon claim 9, Bertness further discloses wherein processing circuitry is further configured to adjust at least one of the measured battery dynamic parameter and the full charge battery dynamic parameter such that the measured battery dynamic parameter and the full charge battery dynamic parameter are at a same temperature standard (Column 7, lines 5-14) (Column 9, line 13).

As to Claim 11, which is dependent upon claim 9, Bertness further discloses a forcing function configured to apply a current pulse to the battery, wherein the processing circuitry is configured to measure the dynamic parameter by determining a response of the battery to an applied current pulse (Column 5, lines 50-56).

As to Claim 12, which is dependent upon claim 9, Bertness further discloses wherein the measured battery dynamic parameter is battery conductance (Column 5, lines 60-62).

As to Claim 13, which is dependent upon claim 9, Bertness further discloses wherein the measured battery dynamic parameter is battery resistance (Column 5, lines 60-62).

As to Claim 14, which is dependent upon claim 9, Bertness discloses wherein the positive connector is a first Kelvin connector and the negative connector is a second Kelvin connector (Elements 36A and 36B) (Column 4, lines 15-18).

As to Claim 15, which is dependent upon claim 9, Sakai further discloses an output configured to display the remaining run time of the battery (Figure 2, Element R1) (Column 47, lines 1-7).

Response to Arguments

3. Applicant's arguments filed 8-22-05 have been fully considered but they are not persuasive. In response to the argument that Bertness does not teach "a full charge battery dynamic parameter and an estimated capacity of the battery", the examiner maintains his rejection. In order to clarify, a state of charge is an estimated capacity of

the battery. Measuring the state of health of a battery is a reference point from the original perfect status of the battery to the present status of the battery. Knowing the present state of health of the battery, with reference with the original health of the battery, one of ordinary skill is capable of determining the present full charge battery dynamic parameters.

4. With regard to the applicants arguments, that Sakai does not teach "predicting the remaining run time of the battery as a function of the measured battery dynamic parameters, the discharge current, the measured battery voltage, the battery temperature, a full charge battery dynamic parameter and an estimated capacity of the battery", the examiner respectfully disagrees with the applicant. Bertness is relied upon for obtaining the measurements of all the values, and he further teaches of determining state of charge of the battery. Sakai's system of predicting the remaining run time is based upon the "Cn" counter, which is set with regard to the state of charge. And therefore the combination of Bertness in view of Sakai, is in fact a function of the values that Bertness measures.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Grant whose telephone number is 571-272-2727. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KARL D. EASTHOM
PRIMARY EXAMINER